

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A communication system ~~wherein-in which~~ a device and a client communicate data with each other through a network, wherein said device comprises:
 - a first storage device which stores a root certificate including a public key ~~in a pair of the public key and paired with~~ a private key and being signed with the ~~public-private~~ key;
 - a certificate creator which creates a second certificate ~~including~~ designating the root certificate ~~designated~~ as a certificate authority at a higher level and being signed with the private key; and
 - a communication device which transmits the second certificate created by said certificate creator to said client; andwherein said client comprises:
 - a second storage device which stores the root certificate stored in said first storage device; and
 - a verifier which verifies the signature of the second certificate received from said device with the root certificate stored in said second storage device.
2. (Original) The communication system according to claim 1, wherein said device is a printer.

3. (Original) The communication system according to claim 1, wherein said device is a multifunctional peripheral.

4. (Original) The communication system according to claim 1, wherein said client is a personal computer.

5. (Original) The communication system according to claim 1, wherein said second storage device is a hard disk drive.

6. (Original) The communication system according to claim 1, wherein said second storage device is a read-only memory.

7. (Currently Amended) A communication method for a communication system, ~~wherein~~ in which a device and a client communicate data with each other through a network,

wherein the device holds a root certificate including a public key ~~in a pair of the public key and paired with~~ a private key and being signed with the ~~public-private~~ key;

the client installs the root certificate ~~received from the client including which is~~ held in the device and which includes the ~~private-public~~ key;

the device creates a second certificate including designating the root certificate ~~designated~~ as a certificate authority at a higher level and being signed with the private key when data is sent to the client;

the device sends the second certificate to the client; and
the client verifies the signature of the second certificate received from the device with the installed root certificate.

8. (Currently Amended) The method according to claim 7, wherein the device further holds ~~an~~ at least one intermediate certificate ~~or intermediate certificates for a certificate authority or for one or more~~ certificate authorities existing in a hierarchical order up to a root certificate authority;

the client installs the at least one intermediate certificate ~~or intermediate certificates besides~~ in addition to the root certificate;

the device sends the second ~~and intermediate certificates~~ certificate to the client; and

the client verifies the ~~signatures~~ signature of the second certificate received from the device with the at least one intermediate certificate installed therein, and verifies the signature of the at least one intermediate ~~certificates~~ certificate received from the device with the ~~intermediate and root certificates~~ certificate installed therein.

9. (Currently Amended) The method according to claim 7, wherein when the client installs the root certificate, the client ~~firstly~~ requests the root certificate from ~~to the device when a printer driver~~ from the device is installed ~~from the device in the client~~, ~~secondly~~ receives the root certificate from the device, ~~thirdly~~ converts the received root certificate to a predetermined format when the root certificate is received, and ~~fourthly~~ installs the converted root certificate.

10. (Currently Amended) The method according to claim 7, wherein when the client installs the root certificate, the installation is performed after ~~it~~ the root certificate is confirmed by a user.

11. (Currently Amended) The method according to claim 7, wherein the device has a print function, and the client installs the root certificate after a printer driver from the device is installed ~~from the device~~ in the client.

12. (Currently Amended) The method according to claim 7, wherein the data is communicated according to the security sockets layer (SSL) protocol.

13. (Currently Amended) A computer-readable storage device storing a program which causes a computer to execute operations comprising: ~~the steps of:~~
requesting a root certificate ~~to~~ from a device connected to the computer through a network;
receiving the root certificate from the device; ~~and~~
~~installing the root certificate~~ converting the received root certificate to a predetermined format upon receiving the root certificate; and
installing the converted root certificate.

14. (Cancelled)

15. (Currently Amended) The computer-readable storage device according to claim 13, wherein the program further causes the computer to execute

an operation comprising the step of installing a printer driver before the requesting stepoperation.

16. (Currently Amended) The computer-readable storage device according to claim 13, wherein the program further causes the computer to execute an operation comprising the step of receiving a user's confirmation on the installation of the root certificate before the requesting stepoperation.

17. (Currently Amended) A device to be used in a communication system between in which the device and a client communicate with each other through a network, ~~wherein~~ the device sends information to the client, and the client uses the information to communicate with the device, the device comprising:

a first storage device which stores a pair of a public key and a private key;

a second storage device which stores a root certificate signed with the ~~public~~ private key; and

a certificate creator which creates a second certificate designating the root certificate as a certificate authority at a higher level and being signed with the private key; and

an interface which sends the information as well as the root certificate including the public key to the client through the network, and sends the second certificate to the client for verification of the information sent from the device.;

~~wherein the root certificate is sent through said interface to the client for verification of the information by the client.~~

18. (Previously Presented) The device according to claim 17, wherein the device is a device which functions as a printer.

19. (Previously Presented) The device according to claim 17, wherein the information is a printer driver.

20. (New) The communication system according to claim 1, wherein the root certificate stored in said first storage device is stored in said second storage device prior to the transmission of the second certificate from said communication device.

21. (New) The communication system according to claim 1, wherein the root certificate stored in said first storage device is stored in said second storage device prior to initiation of communication between said device and said client.

22. (New) The communication system according to claim 1, wherein said verifier is operable to verify the signature of the second certificate by decrypting the public key of the root certificate stored in said second storage device to obtain a first hash value, calculating a second hash value of the second certificate received from said device, and comparing the first and second hash values to determine if they are equal to each other.

23. (New) The method according to claim 7, wherein the device sends the second certificate to the client after the root certificate is installed in the client.

24. (New) The method according to claim 8, wherein the client installs the at least one intermediate certificate prior to receiving the second certificate from the device.

25. (New) A device to be used in a communication system in which the device and a client communicate with each other through a network, the device sends information to the client, and the client uses the information to communicate with the device, the device comprising:

a first storage device which stores a pair of a public key and a private key;

a second storage device which stores a root certificate signed with the private key;

a certificate creator which creates a second certificate designating the root certificate as a certificate authority at a higher level; and

an interface which sends the information as well as the root certificate including the public key to the client through the network, and sends, after the root certificate is installed in the client, the second certificate to the client for verification of the information sent from the device.

26. (New) The device according to claim 25, wherein the device is a device which functions as a printer.

27. (New) The device according to claim 25, wherein the information is a printer driver.